

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

**CLAIMS:**

1.

1 A reinforcing structure of a fuel tank having a first and an opposing  
2 second wall defining a fuel chamber, the reinforcing structure comprising:  
3 a first indentation carried unitarily by the first wall and extending into the  
4 fuel chamber, the first indentation having a bottom portion engaged to the opposing  
5 second wall; and  
6 a stress relief feature disposed within the chamber, the stress relief feature  
7 having an engagement area being annular in shape and thus formed by the engagement of  
8 the bottom portion to the opposing second wall.

2.

1 The reinforcing structure set forth in claim 1 comprising a second  
2 indentation carried unitarily by the second wall, the second indentation having a bottom  
3 portion wherein the stress relief feature is formed between the bottom portions of the  
4 first and second indentations.

3.

1 The reinforcing structure set forth in claim 2, wherein the bottom portions of the  
2 first and second indentations enclosed by the annular engagement area form a void.

4.

1           The reinforcing structure set forth in claim 3, wherein the stress relief  
2     feature has a radial opening communicating between the void and the chamber and for  
3     providing a starting point for a bursting tear through the annular engagement area when a  
4     predetermined internal or external pressure is exceeded.

5.

1           The reinforcing structure set forth in claim 4 wherein the circumferential  
2     orientation of the opening is dependent upon the direction of adverse forces exerted upon  
3     the tank.

6.

1           The reinforcing structure set forth in claim 3, wherein the bottom portions  
2     of the first and second indentations have a substantially constant wall thickness, and  
3     wherein the engagement area is seventy-five percent or less than the cross section area of  
4     either adjacent indentation.

7.

1           The reinforcing structure set forth in claim 6, wherein the fuel tank is a  
2     multi-layered structure of plastic material and is formed by a blow mold process.

8. /

1 A fuel tank comprising:  
2 a first wall;  
3 a second wall opposed to the first wall;  
4 a chamber defined between the first and second walls; and  
5 a reinforcing structure having a first indentation projecting into the  
6 chamber from the first wall, a second indentation projecting into the chamber from the  
7 second wall, a stress relief feature disposed within the chamber, and wherein a bottom  
8 portion of the first indentation is engaged to a bottom portion of the second indentation.

9.

1 The fuel tank set forth in claim 8 wherein the first and second indentations  
2 are unitary to the respective first and second walls.

10.

1 The fuel tank set forth in claim 9 wherein the stress relief feature is  
2 disposed between the bottom portions of the first and second indentations and wherein  
3 the bottom portions are engaged directly by an engagement area of the stress relief  
4 feature.

11.

1 The fuel tank set forth in claim 10 wherein the engagement area is welded  
2 and annular in shape, and wherein the bottom portions disposed radially inward from the  
3 engagement area form a substantial spherical void.

**12.**

1           The fuel tank set forth in claim 11 wherein the stress relief feature has a  
2   radial opening communicating between the chamber and the void.

**13.**

1           The fuel tank set forth in claim 12 wherein the radial opening and the  
2   engagement area are disposed along an imaginary plane.

**14.**

1           The fuel tank set forth in claim 9 wherein the stress relief feature has an  
2   elongated stress relief bar disposed within the chamber and engaged between the first  
3   and second indentations at opposing ends.

**15.**

1           The fuel tank set forth in claim 14 wherein the stress relief feature has a  
2   groove carried transversely by the bar and for providing a starting point for a bursting  
3   tear through the bar when a predetermined internal or external pressure is exceeded.

**16.**

1           The fuel tank set forth in claim 15 wherein the stress relief bar is made of  
2   plastic.

17.

1 A fuel tank comprising:  
2 a first wall;  
3 a second wall opposed to the first wall;  
4 a first indentation projecting into the chamber from the first wall;  
5 a second indentation projecting into the chamber from the second wall;  
6 a hollow protrusion projecting acutely via a juncture into the chamber  
7 from a distal end portion of the second indentation; and  
8 wherein the hollow protrusion engages the first indentation at a distal end.

18.

1 The fuel tank set forth in claim 17 comprising:  
2 the second wall having an interior surface exposed to the chamber and an  
3 exterior surface;  
4 a plug engaged sealably to the exterior surface of the second wall at the  
5 second indentation; and  
6 a secondary chamber defined by the second indentation and carried  
7 between the exterior surface of the second wall and the plug.

19.

1 The fuel tank set forth in claim 18 wherein the smallest wall thickness  
2 defined between the interior and exterior surfaces of the second wall is located at the  
3 juncture of the second indentation, and wherein the cross section area of the second  
4 indentation at the juncture is smaller than the area of the distal end of the protrusion.

20.

- 1 The fuel tanks set forth in claim 19 wherein the distal end is square in  
2 shape.

11  
12  
13  
14  
15  
16  
17  
18  
19  
20